

=> d his nofile

(FILE 'HOME' ENTERED AT 14:15:23 ON 10 DEC 2009)

FILE 'HCAPLUS' ENTERED AT 14:15:32 ON 10 DEC 2009

L1 1 SEA SPE=ON ABB=ON PLU=ON US20080248399/PN
D L1 ALL

FILE 'REGISTRY' ENTERED AT 14:18:19 ON 10 DEC 2009

E TERT-PENTYLBENZENE/CN
L2 1 SEA SPE=ON ABB=ON PLU=ON TERT-PENTYLBENZENE/CN
E ISOPROPYLBENZENE/CN
L3 1 SEA SPE=ON ABB=ON PLU=ON ISOPROPYLBENZENE/CN
E 1,2-DIMETHYLPROPYLBENZENE/CN
E (1,2-DIMETHYLPROPYL)BENZENE/CN
L4 1 SEA SPE=ON ABB=ON PLU=ON "(1,2-DIMETHYLPROPYL)BENZENE"
/CN
E 1,2-DIMETHYLINDAN/CN
L5 1 SEA SPE=ON ABB=ON PLU=ON "1,2-DIMETHYLINDAN"/CN
E 1,3-DIMETHYLINDAN/CN
L6 1 SEA SPE=ON ABB=ON PLU=ON "1,3-DIMETHYLINDAN"/CN
E 1-METHYLTETRAHYDRONAPHTHALENE/CN

FILE 'HCAPLUS' ENTERED AT 14:24:30 ON 10 DEC 2009

L7 408 SEA SPE=ON ABB=ON PLU=ON L2
L8 12833 SEA SPE=ON ABB=ON PLU=ON (L3 OR L4 OR L5 OR L6)
L9 173 SEA SPE=ON ABB=ON PLU=ON L7 AND L8

FILE 'ZCAPLUS' ENTERED AT 14:25:11 ON 10 DEC 2009

L10 QUE SPE=ON ABB=ON PLU=ON ?ELECTROLYT?
L11 QUE SPE=ON ABB=ON PLU=ON SOL# OR SOLN# OR SOLUTION#
L12 QUE SPE=ON ABB=ON PLU=ON L10 (3A) L11

FILE 'HCAPLUS' ENTERED AT 14:26:04 ON 10 DEC 2009

L13 1 SEA SPE=ON ABB=ON PLU=ON L9 (L) L12

FILE 'ZCAPLUS' ENTERED AT 14:27:25 ON 10 DEC 2009

L14 QUE SPE=ON ABB=ON PLU=ON LI# OR LITHIUM#
L15 QUE SPE=ON ABB=ON PLU=ON BATTERY# OR BATTERIES# OR
ELECTROCHEM? (2A) CELL#
L16 QUE SPE=ON ABB=ON PLU=ON L14 (3A) L15

FILE 'HCAPLUS' ENTERED AT 14:28:07 ON 10 DEC 2009

L17 1 SEA SPE=ON ABB=ON PLU=ON L9 (L) L16

L18 1 SEA SPE=ON ABB=ON PLU=ON L9 AND L16
 L19 1 SEA SPE=ON ABB=ON PLU=ON L9 AND L12
 L20 1 SEA SPE=ON ABB=ON PLU=ON L13 OR L17 OR L18 OR L19
 D L20 TI AU

FILE 'REGISTRY' ENTERED AT 14:36:57 ON 10 DEC 2009

E 1,3-DI-TERT-BUTYLBENZENE/CN
 L21 1 SEA SPE=ON ABB=ON PLU=ON "1,3-DI-TERT-BUTYLBENZENE"/CN
 E 1-TERT-BUTYL-3-ISOPROPYLBENZENE/CN
 E (1-TERT-BUTYL-3-ISOPROPYL)BENZENE/CN
 E (1-TERTBUTYL-3-ISOPROPYL)BENZENE/CN
 E 1-TERT-BUTYL/CN
 E 1-TERT-BUTYL 3/CN
 E 1-TERT-BUTYL 3-ISOPROPYL/CN
 E 1,4-DI-TERT-BUTYLBENZENE/CN
 L22 1 SEA SPE=ON ABB=ON PLU=ON "1,4-DI-TERT-BUTYLBENZENE"/CN
 E 1-TERT-BUTYL-4-ISOPROPYLBENZENE/CN
 L23 1 SEA SPE=ON ABB=ON PLU=ON 1-TERT-BUTYL-4-ISOPROPYLBENZE
 NE/CN
 E 4-FLUORO-TERT-BUTYLBENZENE/CN
 E 4-FLUORO-ISOPROPYLBENZENE/CN
 E 4-FLUORO-ISOPROPYL-BENZENE/CN
 E 4-TERT-BUTYLBIPHENYL/CN
 L24 1 SEA SPE=ON ABB=ON PLU=ON 4-TERT-BUTYLBIPHENYL/CN
 E 4-SEC-BUTYLBIPHENYL/CN
 L25 1 SEA SPE=ON ABB=ON PLU=ON 4-SEC-BUTYLBIPHENYL/CN
 E 1,3-DI-TERT-PENTYLBENZENE/CN
 E 1-TERT-PENTYL-3-ISOPROPYLBENZENE/CN
 E 1-TERT-PENTYL-3-ISOPROPYL-BENZENE/CN
 E 1,4-DI-TERT-PENTYLBENZENE/CN
 L26 1 SEA SPE=ON ABB=ON PLU=ON "1,4-DI-TERT-PENTYLBENZENE"/C
 N
 E 1-TERT-PENTYL-4-ISOPROPYLBENZENE/CN
 E 1-TERT-BUTYL-4-TERT-PENTYLBENZENE/CN
 E 1-TERT-BUTYL-4-ISOPROPYLBENZENE/CN
 L27 1 SEA SPE=ON ABB=ON PLU=ON 1-TERT-BUTYL-4-ISOPROPYLBENZE
 NE/CN

FILE 'HCAPLUS' ENTERED AT 14:58:32 ON 10 DEC 2009

L28 168 SEA SPE=ON ABB=ON PLU=ON L21
 L29 355 SEA SPE=ON ABB=ON PLU=ON L22
 L30 113 SEA SPE=ON ABB=ON PLU=ON L24
 L31 12 SEA SPE=ON ABB=ON PLU=ON L26
 L32 955 SEA SPE=ON ABB=ON PLU=ON L31 OR L30 OR L29 OR L28 OR
 L7

L33 64 SEA SPE=ON ABB=ON PLU=ON L23
 L34 12 SEA SPE=ON ABB=ON PLU=ON L25
 L35 64 SEA SPE=ON ABB=ON PLU=ON L27
 L36 12866 SEA SPE=ON ABB=ON PLU=ON L35 OR L34 OR L33 OR L8
 L37 254 SEA SPE=ON ABB=ON PLU=ON L32 AND L36
 L38 5 SEA SPE=ON ABB=ON PLU=ON L37 AND L15
 L39 5 SEA SPE=ON ABB=ON PLU=ON L37 (L) L10
 L40 6 SEA SPE=ON ABB=ON PLU=ON L38 OR L39
 D SCA

=> d que 140

L2 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON TERT-PENTYLBENZ
 ENE/CN
 L3 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON ISOPROPYLBENZEN
 E/CN
 L4 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON "(1,2-DIMETHYLP
 ROPYL)BENZENE"/CN
 L5 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON "1,2-DIMETHYLIN
 DAN"/CN
 L6 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON "1,3-DIMETHYLIN
 DAN"/CN
 L7 408 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L2
 L8 12833 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON (L3 OR L4 OR L5
 OR L6)
 L10 QUE SPE=ON ABB=ON PLU=ON ?ELECTROLYT?
 L15 QUE SPE=ON ABB=ON PLU=ON BATTERY# OR BATTERIES# OR EL
 ECTROCHEM? (2A) CELL#
 L21 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON "1,3-DI-TERT-BU
 TYLBENZENE"/CN
 L22 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON "1,4-DI-TERT-BU
 TYLBENZENE"/CN
 L23 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 1-TERT-BUTYL-4-
 ISOPROPYLBENZENE/CN
 L24 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 4-TERT-BUTYLBIP
 HENYL/CN
 L25 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 4-SEC-BUTYLBIPH
 ENYL/CN
 L26 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON "1,4-DI-TERT-PE
 NTYLBENZENE"/CN
 L27 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 1-TERT-BUTYL-4-
 ISOPROPYLBENZENE/CN
 L28 168 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L21
 L29 355 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L22
 L30 113 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L24
 L31 12 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L26
 L32 955 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L31 OR L30 OR
 L29 OR L28 OR L7

L33 64 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L23
 L34 12 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L25
 L35 64 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L27
 L36 12866 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L35 OR L34 OR
 L33 OR L8
 L37 254 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L32 AND L36
 L38 5 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L37 AND L15
 L39 5 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L37 (L) L10
 L40 6 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L38 OR L39

=> d 140 1-6 bib abs hitstr hitind

L40 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN
 AN 2005:1049966 HCAPLUS Full-text
 DN 143:349948
 TI Nonaqueous electrolyte solution for secondary lithium
 secondary battery
 IN Abe, Koji; Ushigoe, Yoshihiro; Ito, Akikazu
 PA Ube Industries, Ltd., Japan
 SO PCT Int. Appl., 27 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005091423	A1	20050929	WO 2005-JP5022	20050318
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2560380	A1	20050929	CA 2005-2560380	20050318
CN 1954456	A	20070425	CN 2005-80015478	

200503
18

US 20080248399 A1 20081009 US 2006-593231

200609
18

KR 2006130258 A 20061218 KR 2006-721619

200610
18

IN 2006CN03858 A 20070615 IN 2006-CN3858

200610
18

PRAI JP 2004-79693 A 20040319
WO 2005-JP5022 W 20050318

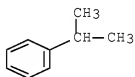
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The electrolyte solution has an electrolyte dissolved in a nonaq. solvent and contains 0.1-10 % tert-alkyl benzene compound and 0.001-0.5% benzene compound, having C1-4 hydrocarbon group bonded to a benzene ring via the tertiary C atom, relative to the tert-alkyl benzene compound

IT 98-82-8, Isopropylbenzene 1014-60-4,
1,3-Di-tert-butylbenzene 2049-95-8, tert-Pentylbenzene
4481-30-5, (1,2-Dimethylpropyl)benzene
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte solns. containing tert-alkyl benzene compds.
and benzene compds. for secondary lithium secondary
batteries)

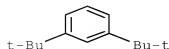
RN 98-82-8 HCAPLUS

CN Benzene, (1-methylethyl)- (CA INDEX NAME)



RN 1014-60-4 HCAPLUS

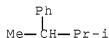
CN Benzene, 1,3-bis(1,1-dimethylethyl)- (CA INDEX NAME)



RN 2049-95-8 HCAPLUS
 CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



RN 4481-30-5 HCAPLUS
 CN Benzene, (1,2-dimethylpropyl)- (CA INDEX NAME)



IC ICM H01M010-40
 ICS C07C007-148; C07C015-02
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 ST lithium secondary battery electrolyte alkyl
 benzene compd
 IT **Battery electrolytes**
 (electrolyte solns. containing tert-alkyl benzene compds.
 and benzene compds. for secondary lithium secondary
 batteries)
 IT 96-49-1, Ethylene carbonate 623-53-0, Methyl ethyl carbonate
 12190-79-3, Cobalt lithium oxide (CoLiO2) 14283-07-9, Lithium
 tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate
 346417-97-8, Cobalt lithium manganese nickel oxide
 (Co0.33LiMn0.33Ni0.33O2)
 RL: DEV (Device component use); USES (Uses)
 (electrolyte solns. containing tert-alkyl benzene compds.
 and benzene compds. for secondary lithium secondary
 batteries)
 IT 98-06-6, tert-Butylbenzene 98-82-8, Isopropylbenzene
 135-98-8, sec-Butylbenzene 872-36-6, Vinylene carbonate
 1014-60-4, 1,3-Di-tert-butylbenzene 1559-81-5
 2049-95-8, tert-Pentylbenzene 4481-30-5,

(1,2-Dimethylpropyl)benzene 53563-67-0, Dimethylindan
 RL: MOA (Modifier or additive use); USES (Uses)
 (electrolyte solns. containing tert-alkyl benzene compds.
 and benzene compds. for secondary lithium secondary
 batteries)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L40 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2005:823988 HCAPLUS Full-text

DN 143:232676

TI Nonaqueous electrolyte for lithium secondary
 battery

IN Ahn, Soon-Ho; Lee, Jae-Hyun; Cho, Jeong-Ju; Lee, Ho-Chun; Son,
 Mi-Young; Kim, Hyeong-Jin; Lee, Han-Ho

PA LG Chem, Ltd., S. Korea

SO PCT Int. Appl., 33 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005076403	A1	20050818	WO 2004-KR257	20040210
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, BG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
EP 1728291	A1	20061206	EP 2004-709768	20040210
R:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LI, LU, MC, NL, PT, RO, SE, SI, SK, TR			
CN 1914761	A	20070214	CN 2004-80041548	20040210

CN 100502132	C	20090617			
JP 2007522632	T	20070809	JP 2006-553038		20040210
TW 250678	B	20060301	TW 2004-93106934		20040316
US 20070141475	A1	20070621	US 2006-588481		20060801

PRAI WO 2004-KR257 W 20040210

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

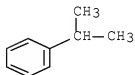
AB The invention relates to a nonaq. **electrolyte** solution containing new additives and a lithium secondary **battery** including the same. More particularly, the invention relates to a nonaq. **electrolyte** solution containing a lithium salt, an **electrolyte** compound, a first additive compound with an oxidation initiation potential of more than 4.2 V, and a second additive compound with an oxidation initiation potential of more than 4.2 V, which is higher in oxidation initiation potential than the first additive, and deposits oxidative products or form a polymer film, in oxidation, as well as a lithium secondary **battery** including the same. The present invention can provide a lithium secondary **battery** excellent in both the **battery** performance and the **battery** safety in overcharge by the combined use of the first additive and the second **battery** as additives to the nonaq. **electrolyte** solution

IT 98-82-8, Isopropylbenzene 1012-72-2,
1,4-Di-tert-butylbenzene

RL: MOA (Modifier or additive use); USES (Uses)
(nonaq. **electrolyte** for lithium secondary
battery)

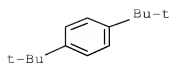
RN 98-82-8 HCAPLUS

CN Benzene, (1-methylethyl)- (CA INDEX NAME)



RN 1012-72-2 HCAPLUS

CN Benzene, 1,4-bis(1,1-dimethylethyl)- (CA INDEX NAME)



- IC ICM H01M010-40
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST lithium secondary battery nonaq electrolyte;
safety lithium secondary battery nonaq electrolyte
- IT Secondary batteries
(lithium; nonaq. electrolyte for lithium secondary battery)
- IT Battery electrolytes
(nonaq. electrolyte for lithium secondary battery)
- IT Aromatic compounds
RL: MOA (Modifier or additive use); USES (Uses)
(nonaq. electrolyte for lithium secondary battery)
- IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate
108-32-7, Propylene carbonate 21324-40-3, Lithium hexafluorophosphate
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte for lithium secondary battery)
- IT 71-43-2, Benzene, uses 92-52-4, Biphenyl, uses 96-09-3,
Phenyloxirane 96-43-5, 2-Chlorothiophene 98-06-6,
tert-Butylbenzene 98-82-8, Isopropylbenzene 99-62-7,
1,3-Diisopropylbenzene 100-18-5, 1,4-Diisopropylbenzene
100-41-4, Ethylbenzene, uses 100-42-5, Vinylbenzene, uses
100-47-0, Benzonitrile, uses 100-84-5, 3-Methylanisole 101-84-8,
Diphenyl ether 103-63-9 104-85-8, 4-Methylbenzonitrile
104-93-8, 4-Methylanisole 106-42-3, 1,4-Dimethylbenzene, uses
108-48-5, 2,6-Dimethylpyridine 108-67-8, Mesitylene, uses
108-88-3, Toluene, uses 110-00-9, Furan 110-02-1, Thiophene
132-64-9, Dibenzofuran 139-66-2, Phenyl sulfide 140-39-6,
p-Methylphenyl acetate 321-60-8, 2-Fluoro-1,1'-biphenyl
352-32-9, p-Fluorotoluene 352-70-5, m-Fluorotoluene 452-10-8,
2,4-Difluoroanisole 462-06-6, Fluorobenzene 609-40-5,
2-Nitrothiophene 616-44-4, 3-Methylthiophene 617-90-3,
2-Cyanofuran 827-52-1, Cyclohexylbenzene 873-49-4,
Cyclopropylbenzene 1012-72-2, 1,4-Di-tert-butylbenzene
1016-09-7, Diphenylmethyl methyl ether 1585-07-5,

1-Bromo-4-ethylbenzene 2745-25-7, 2-Furanacetonitrile 20282-30-8
 30078-65-0, 3-Cyanofuran

RL: MOA (Modifier or additive use); USES (Uses)
 (nonaq. electrolyte for lithium secondary
 battery)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L40 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2005:219962 HCAPLUS Full-text

DN 142:282886

TI Nonaqueous solvent secondary battery

IN Takahashi, Kentaro

PA Sanyo Electric Co., Ltd., Japan

SO U.S. Pat. Appl. Publ., 11 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

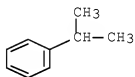
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	US 20050053843	A1	20050310	US 2004-936658	200409 09
	US 7582388	B2	20090901		
	JP 2005085608	A	20050331	JP 2003-316641	200309 09
	TW 238554	B	20050821	TW 2004-93110633	200404 16
	CN 1595711	A	20050316	CN 2004-10048573	200406 08
	CN 100466362	C	20090304		
PRAI	JP 2003-316641	A	20030909		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The invention concerns a nonaq. solvent secondary battery with a high initial charge/discharge capacity and excellent charge/discharge characteristics at high temperature, having a pos. electrode containing a pos. electrode active material capable of reversibly occluding and releasing lithium, a neg. electrode containing a neg. electrode active material capable of reversibly occluding and releasing lithium and a non-aqueous solvent electrolyte containing (1) acrylic acid anhydride, and (2) an aromatic compound having at least one electron donating group, wherein the electron donating

group comprises at least one member selected from any of the alkyl group, alkoxy group, alkylamino group and amine, provided that each of the alkyl group, alkoxy group and alkylamino group includes a halogen substituted group and a cycloaliph. group.

IT 98-82-8, Cumene 2049-95-8, tert-Amylbenzene
 RL: DEV (Device component use); USES (Uses)
 (nonaq. solvent secondary battery)
 RN 98-82-8 HCAPLUS
 CN Benzene, (1-methylethyl)- (CA INDEX NAME)



RN 2049-95-8 HCAPLUS
 CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



IC ICM H01M010-40
 INCL 429329000; 429303000
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 ST nonaq solvent secondary battery
 IT Anhydrides
 RL: DEV (Device component use); USES (Uses)
 (cyclic; nonaq. solvent secondary battery)
 IT Battery electrolytes
 Secondary batteries
 (nonaq. solvent secondary battery)
 IT Aromatic compounds
 Carbonaceous materials (technological products)
 RL: DEV (Device component use); USES (Uses)
 (nonaq. solvent secondary battery)
 IT 62-53-3, Aniline, uses 85-42-7, 1,2-Cyclohexane dicarboxylic acid

anhydride 85-44-9, Phthalic acid anhydride 98-06-6,
 tert-Butylbenzene 98-51-1, 4-tert-Butyltoluene 98-82-8
 , Cumene 100-41-4, Ethylbenzene, uses 100-61-8, n-Methylaniline,
 uses 100-66-3, Anisole, uses 103-65-1, Propylbenzene 103-69-5,
 n-Ethylaniline 103-73-1, Ethoxybenzene 104-51-8, Butylbenzene
 104-93-8, 4-Methylanisole 108-30-5, Succinic acid anhydride, uses
 108-31-6, Maleic acid anhydride, uses 108-32-7, Propylene
 carbonate 108-55-4, Glutaric acid anhydride 108-67-8,
 1,3,5-Trimethylbenzene, uses 108-88-3, Toluene, uses 109-17-1,
 Tetraethylene glycol dimethacrylate 119-64-2,
 1,2,3,4-Tetrahydronaphthalene 121-69-7, n,n-Dimethylaniline, uses
 129-64-6, Norbornene-endo-2,3-dicarboxylic acid anhydride
 135-98-8, sec-Butylbenzene 452-10-8, 2,4-Difluoroanisole
 456-49-5, 3-Fluoroanisole 459-60-9, 4-Fluoroanisole 496-11-7,
 Indane 535-77-3, 3-Isopropyltoluene 538-68-1, Amylbenzene
 538-93-2, Isobutylbenzene 622-85-5, Propoxybenzene 626-25-5,
 Glycolic acid anhydride 701-30-4 827-52-1, Cyclohexylbenzene
 873-49-4, Cyclopropylbenzene 935-79-5,
 cis-1,2,3,6-Tetrahydrophthalic acid anhydride 1007-26-7,
 (2,2-Dimethylpropyl)benzene 1131-15-3 2049-95-8,
 tert-Amylbenzene 2959-96-8 4100-80-5 4437-85-8, Butylene
 carbonate 17347-61-4 28928-97-4 29316-05-0, sec-Amylbenzene
 93343-10-3, 3,5-Difluoroanisole 124221-30-3 847484-87-1
 RL: DEV (Device component use); USES (Uses)
 (nonaq. solvent secondary battery)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L40 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2003:982461 HCAPLUS Full-text

DN 140:44701

TI Redox mediator as an overcharge protection agent for 4 V class
 lithium-ion rechargeable cells

AU Shima, Kunihisa; Ue, Makoto; Yamaki, Jun-ichi

CS Mitsubishi Chemical Group Science and Technology Research Center,
 Inc., Ami, Inashiki, Ibaraki, 300-0332, Japan

SO Electrochemistry (Tokyo, Japan) (2003), 71(12), 1231-1235

CODEN: EECTFA; ISSN: 1344-3542

PB Electrochemical Society of Japan

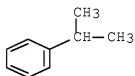
DT Journal

LA English

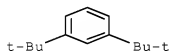
AB It is well-known that an aromatic compound such as biphenyl is added
 into electrolyte solns. to prevent lithium-ion batteries from
 overcharging, generating hydrogen gas under overcharging conditions.
 We have examined the oxidative behaviors of one-benzene-ring aromatic
 compds. including benzene, toluene, ethylbenzene, cumene, tert-
 butylbenzene, and cyclohexylbenzene under the overcharging

conditions. We have found that aromatic compds. without hydrogen atom at the benzylic position such as tert-butylbenzene generated mainly carbon dioxide, whereas those with hydrogen atom at the benzylic position showed polymerization accompanied by hydrogen evolution. It was considered that tert-butylbenzene works as a redox mediator, which mediates the oxidative decomposition of carbonate solvents evolving the carbon dioxide.

IT 98-82-8, Cumene 1014-60-4,
1,3-Di-tert-butylbenzene
RL: MOA (Modifier or additive use); USES (Uses)
(aromatic compound redox mediators as overcharge protection agent
for 4 V class lithium-ion batteries)
RN 98-82-8 HCAPLUS
CN Benzene, (1-methylethyl)- (CA INDEX NAME)



RN 1014-60-4 HCAPLUS
CN Benzene, 1,3-bis(1,1-dimethylethyl)- (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium ion battery arom compd redox mediator overcharge
protection
IT Secondary batteries
(aromatic compound redox mediators as overcharge protection agent
for 4 V class lithium-ion batteries)
IT 71-43-2, Benzene, uses 98-06-6, tert-Butylbenzene
98-82-8, Cumene 100-41-4, Ethylbenzene, uses 108-88-3,
Toluene, uses 827-52-1, Cyclohexylbenzene 1014-60-4,

1,3-Di-tert-butylbenzene

RL: MOA (Modifier or additive use); USES (Uses)

(aromatic compound redox mediators as overcharge protection agent

for

4 V class lithium-ion **batteries**)

OSC.G 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L40 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2000:809760 HCAPLUS Full-text

DN 134:46039

TI Characterization of emissions from diffusion flare systems

AU Stroscher, Mel T.

CS Alberta Research Council, Calgary, AB, Can.

SO Journal of the Air & Waste Management Association (2000), 50(10), 1723-1733

CODEN: JAWAFC; ISSN: 1096-2247

PB Air & Waste Management Association

DT Journal

LA English

AB Emissions from flares typical like at oil-field **battery** sites in Alberta, Canada, were examined to determine the degree to which the flared gases were burned and to characterize the combustion products in the emissions. The study consisted of laboratory-, pilot-scale, and field-scale investigations. Combustion of all hydrocarbon fuels in laboratory- and pilot-scale tests produced a complex variety of hydrocarbon products within the flame, primarily by pyrolytic reactions. Acetylene, ethylene, benzene, styrene, ethynyl benzene, and naphthalene were the major constituents produced by conversion of >10% of the CH₄ within the flames. A majority of hydrocarbons produced within pure gas fuel flames were effectively destroyed in the outer combustion zone, resulting in combustion efficiencies >98% as measured in the emissions. Adding liquid hydrocarbon fuels or condensates to pure gas streams had the largest effect on impairing the ability of the resulting flame to destroy pyrolytically-produced hydrocarbons as well as original hydrocarbon fuels directed to the flare. Cross-winds also reduced combustion efficiency (CE) of co-flowing gas/condensate flames by causing more unburned fuel and pyrolytically-produced hydrocarbons to escape into the emissions. Flaring solution gas at oil-field **battery** sites burned with an efficiency of 62-82%, depending on how much fuel was directed to flare or how much liquid hydrocarbon was in the knockout drum. In most cases, benzene, styrene, ethynyl benzene, ethynyl-Me benzenes, toluene, xylenes, acenaphthylene, biphenyl, and fluorene were the most abundant compds. in any emissions examined in field flare

testing. Emissions from sour solution gas flaring also contained reduced S compds. and thiophenes.

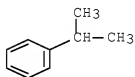
IT 98-82-8, (1-Methylethyl)-benzene 2049-95-8,
(1,1-Dimethylpropyl)benzene 17057-82-8

RL: OCU (Occurrence, unclassified); OCCU (Occurrence)
(flame type, condensates and other liquid droplets during gaseous
fuel flaring, and cross-winds effect on chemical composition of

oil and gas industry diffusion flare system emissions, Canada)

RN 98-82-8 HCAPLUS

CN Benzene, (1-methylethyl)- (CA INDEX NAME)



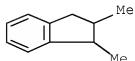
RN 2049-95-8 HCAPLUS

CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



RN 17057-82-8 HCAPLUS

CN 1H-Indene, 2,3-dihydro-1,2-dimethyl- (CA INDEX NAME)



CC 59-4 (Air Pollution and Industrial Hygiene)

Section cross-reference(s): 51

IT 50-32-8, Benzo(a)pyrene, occurrence 65-85-0, Benzoic acid, occurrence 71-43-2, Benzene, occurrence 86-73-7, 9H-Fluorene 90-00-6, 2-Ethylphenol 90-12-0, 1-Methylnaphthalene 91-20-3, Naphthalene, occurrence 91-57-6, 2-Methylnaphthalene 92-52-4, 1,1'-Biphenyl, occurrence 95-48-7, 2-Methylphenol, occurrence 95-63-6, 1,2,4-Trimethylbenzene 95-87-4, 2,5-Dimethylphenol 95-93-2, 1,2,4,5-Tetramethylbenzene 98-82-8, (1-Methylethyl)-benzene 99-87-6, 1-Methyl-4-(1-methylethyl)benzene 100-41-4, Ethylbenzene, occurrence 100-42-5, Ethenylbenzene, occurrence 103-65-1, Propylbenzene 104-87-0, 4-Methylbenzaldehyde 106-42-3, 1,4-Dimethylbenzene, occurrence 106-44-5, 4-Methylphenol, occurrence 108-67-8, 1,3,5-Trimethylbenzene, occurrence 108-68-9, 3,5-Dimethylphenol 108-87-2, Methylcyclohexane 108-88-3, Methylbenzene, occurrence 109-66-0, Pentane, occurrence 110-54-3, Hexane, occurrence 110-82-7, Cyclohexane, occurrence 111-65-9, Octane, occurrence 111-84-2, Nonane 112-40-3, Dodecane 120-12-7, Anthracene, occurrence 124-18-5, Decane 129-00-0, Pyrene, occurrence 142-82-5, Heptane, occurrence 192-97-2, Benzo(e)pyrene 203-64-5, 4H-Cyclopenta(def)phenanthrene 206-44-0, Fluoranthene 208-96-8, Acenaphthylene 217-59-4, Triphenylene 218-01-9, Chrysene 232-95-1, Naphtho[2,1-B]furan 238-84-6, 11H-Benzo(a)fluorene 243-17-4, 11H-Benzo(b)fluorene 259-79-0, Biphenylene 488-23-3, 1,2,3,4-Tetramethylbenzene 527-53-7, 1,2,3,5-Tetramethylbenzene 536-74-3, Ethynylbenzene 562-49-2, 3,3-Dimethylpentane 571-58-4, 1,4-Dimethylnaphthalene 571-61-9, 1,5-Dimethylnaphthalene 575-37-1, 1,7-Dimethylnaphthalene 581-40-8, 2,3-Dimethylnaphthalene 589-34-4, 3-Methylhexane 611-14-3, 1-Ethyl-2-methylbenzene 611-15-4, 1-Ethenyl-2-methylbenzene 613-12-7, 2-Methylantracene 613-59-2, 2-(Phenylmethyl)naphthalene 619-99-8, 3-Ethylhexane 620-83-7, 1-Methyl-4-(phenylmethyl)benzene 638-04-0, cis-1,3-Dimethylcyclohexane 643-93-6, 3-Methyl-1,1'-biphenyl 700-12-9, Pentamethylbenzene 713-36-0, 1-Methyl-2-(phenylmethyl)benzene 832-71-3, 3-Methylphenanthrene 844-51-9, 2,5-Cyclohexadiene-1,4-dione, 2,5-Diphenyl- 886-66-8, Benzene, 1,1'-(1,3-Butadiene-1,4-diyl)bis- 922-28-1, 3,4-Dimethylheptane 933-98-2, 1-Ethyl-2,3-dimethylbenzene 934-80-5, 4-Ethyl-1,2-dimethylbenzene 939-27-5, 2-Ethynaphthalene 1074-17-5, 1-Methyl-2-propylbenzene 1120-21-4, Undecane 1196-58-3, (1-Ethylpropyl)benzene 1430-97-3, 2-Methyl-9H-fluorene 1576-67-6, 3,6-Dimethylphenanthrene 1678-91-7, Ethylcyclohexane 1678-98-4, (2-Methylpropyl)-cyclohexane 1730-37-6, 1-Methyl-9H-fluorene 1812-51-7, 1,1'-Biphenyl, 2-Ethyl- 1839-63-0, 1,3,5-Trimethylcyclohexane 2049-95-8, (1,1-Dimethylpropyl)benzene 2050-24-0, 1,3-Diethyl-5-methylbenzene 2051-30-1, 2,6-Dimethyloctane 2131-41-1,

1,4,5-Trimethylnaphthalene 2131-42-2, 1,4,6-Trimethylnaphthalene
 2206-23-7, 3-Penten-1-yne 2234-75-5, 1,2,4-Trimethylcyclohexane
 2452-99-5, 1,2-Dimethylcyclopentane 2531-84-2,
 2-Methylphenanthrene 2610-95-9 3061-36-7, 1,4-Diphenyloxybenzene
 3379-37-1, Benzene, 1,2-Diphenoxy- 3442-78-2, 2-Methylpyrene
 3674-65-5, 2,3-Dimethylphenanthrene 3674-66-6,
 2,5-Dimethylphenanthrene 3674-73-5, 2,3,5-Trimethylphenanthrene
 3855-26-3, 2-Ethyl-4-methylphenol 4425-82-5,
 9-Methylene-9H-fluorene 4489-84-3, (3-Methyl-2-butenyl)benzene
 4612-63-9, 2,3-Dimethyl-9H-fluorene 4957-14-6 5911-04-6,
 3-Methylnonane 6975-92-4, 2,5-Dimethyl-1-hexene 13151-34-3,
 3-Methyldecane 14064-48-3 17057-82-8 17302-23-7,
 4,5-Dimethylnonane 21895-13-6 21895-16-9 22364-43-8
 25155-15-1, Methyl(1-methylethyl)benzene 25340-17-4,
 Diethylbenzene 29053-04-1, Cyclopentane,
 1-Methyl-3-(2-methylpropyl)- 55712-60-2, Benzo(b)thiophene,
 3-(2-Naphthalenyl)- 61142-07-2 74685-42-0,
 1-Methyl-2-(2-phenylethenyl)benzene

RL: OCU (Occurrence, unclassified); OCCU (Occurrence)

(flame type, condensates and other liquid droplets during gaseous
 fuel flaring, and cross-winds effect on chemical composition of

oil and

gas industry diffusion flare system emissions, Canada)

OSC.G 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5
 CITINGS)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L40 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1956:54712 HCAPLUS Full-text

DN 50:54712

OREF 50:10440g-h

TI Ionic polymerization. VII. Relative reactivities of mono- and
 p-dialkylbenzenes as molecular terminating agents in the cationic
 polymerization of styrene

AU Overberger, C. G.; Endres, G. F.; Monaci, Avito

CS Polytech. Inst. of Brooklyn, Brooklyn, NY

SO Journal of the American Chemical Society (1956), 78, 1969-73

CODEN: JACSAT; ISSN: 0002-7863

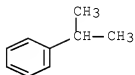
DT Journal

LA Unavailable

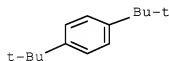
AB cf. C.A. 49, 15409a; 50, 2456e. The mol. termination consts. k_r/k_p
 of 8 mono- and p-dialkyl-benzenes were determined in the
 polymerization of styrene (I) by SnCl_4 . The activating effect of the
 alkyl substituents on the aromatic nucleus was in the order $\text{Me} > \text{Et} >$
 $\text{iso-Pr} > \text{Me}_3\text{C}$, in agreement with their effect in other types of
 electrophilic aromatic substitution. This order of activation is

believed to be the result largely of steric effects. The results indicate that under these conditions hydride transfer from the side chains of these compds. does not take place to a significant extent.

IT 98-82-8, Cumene 1012-72-2, Benzene,
p-di-tert-butyl-
(in styrene polymerization by SnCl₄ as terminating agent)
RN 98-82-8 HCAPLUS
CN Benzene, (1-methylethyl)- (CA INDEX NAME)



RN 1012-72-2 HCAPLUS
CN Benzene, 1,4-bis(1,1-dimethylethyl)- (CA INDEX NAME)



CC 31 (Synthetic Resins and Plastics)
IT Ions
(electrolytic, polymerization by)
IT 98-51-1, Toluene, p-tert-butyl- 98-82-8, Cumene
99-87-6, p-Cymene 1012-72-2, Benzene, p-di-tert-butyl-
(in styrene polymerization by SnCl₄ as terminating agent)

=>